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Koenck et al.

[45] **Date of Patent:** Jun. 28, 1994[54] **HAND-HELD DATA TERMINAL AND COMMUNICATOR**[75] **Inventors:** Steven E. Koenck; Phillip Miller; Darald R. Schultz, all of Cedar Rapids, Iowa[73] **Assignee:** Norand Corporation, Cedar Rapids, Iowa[21] **Appl. No.:** 25,039[22] **Filed:** Mar. 1, 1993**Related U.S. Application Data**

[63] Continuation-in-part of Ser. No. 996,908, Dec. 28, 1992, which is a continuation-in-part of Ser. No. 951,263, Sep. 25, 1992.

[51] **Int. Cl.⁵** G06K 7/10[52] **U.S. Cl.** 235/472; 235/462; 235/470[58] **Field of Search** 235/462, 470, 472[56] **References Cited****U.S. PATENT DOCUMENTS**

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The present invention discloses a hand-held terminal adapted for data gathering, data processing, and voice and data communication. Included is a housing which includes a front section having an exterior and an interior, and a rear section having an exterior and an interior, wherein the front section is hinged to the rear section. These front and rear sections may be disposed in either a linear, angular, or parallel relationship. Key means for entering information into the terminal and display means for displaying information are incorporated into the exterior of the front section. A low power frequency hopping transceiver is disposed at least partially within the housing for receiving and transmitting information via the terminal. Also included are scanning means disposed within the housing for optically reading information stored in coded information sets and battery means disposed within the housing for providing electrical power. Finally, a computer is included within the housing for processing information input and output the terminal.

12 Claims, 6 Drawing Sheets